

**REMARKS**

Claims 1 - 18 are pending in the current application, of which claims 3 - 18 have been withdrawn from consideration. Claim 1 has been amended. No new matter has been added. Applicants respectfully submit that this Amendment is fully responsive to the Office Action dated **October 3, 2002**.

**35 U.S.C. §112, Second Paragraph, Rejection:**

Claims 1 and 2 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

This rejection is respectfully traversed.

More specifically, the Examiner contends that the phrase “the not permanently oscillating member” added in the last Amendment to line 5 of claim 1 is unclear. However, such phrase was intended to point out that the transducer does not always vibrate at the time of detecting acceleration. That is, a torsion vibration is caused only when acceleration is caused.

In any event, claim 1 has been amended to specifically call for a transducer that is supported at the base and exhibits torsion vibration only when acceleration is caused. As such, it is respectfully submit that the amendments to claim 1 overcomes the rejection of claims 1 and 2 under 35 U.S.C.

§112, second paragraph. Accordingly, withdrawal of the rejection of claims 1 and 2 under 35 U.S.C. §112, second paragraph, is respectfully solicited.

**As To The Merits:**

As to the merits of this case, while the Examiner maintains the reliance on **Heinouchi**, the Examiner also relies on the newly cited reference of **Kobayashi** (U.S. Patent No. 4,848,157) in setting forth the following rejections:

1) claims 1 and 2 stand rejected under 35 U.S.C. § 102(b) as being anticipated by **Heinouchi**;  
and

2) claims 1 and 2 stand rejected under 35 U.S.C. § 102(b) as being anticipated by **Kobayashi**.

Both of these rejections are respectfully traversed.

With regard to the applicant's arguments that **Heinouchi** discloses a transducer which is vibrated beforehand and acceleration caused while the transducer is vibrating is detected and thus **Heinouchi** fails to disclose a torsion vibration which is caused only when acceleration is caused, the Examiner takes the following position:

Applicants' comments with regards to a torsion vibration is caused only when acceleration is caused have been considered. ... There is no claim language in the presently claimed claims stating that the transducer does not vibrate or does not vibrate before detecting acceleration as presented in the remarks made by Applicants in the Amendment filed July 31, 2002.<sup>1</sup>

That is, the Examiner takes the position that the added language of "not permanently oscillating transducer" does not encompass the feature of a transducer which has a torsion vibration caused only when acceleration is caused.

However, as discussed above, claim 1 has been amended to specifically call for a transducer that is supported at the base and exhibits torsion vibration only when acceleration is caused. As such, it is respectfully that **Heinouchi** fails to disclose the features of claim 1 concerning a torsion vibration which is caused only when acceleration is caused.

With regard to the newly cited reference of **Kobayashi**, the Examiner asserts that **Kobayashi** discloses "a detecting section 16a-16d is installed on the base (as one observed, the detecting section , which is positioned on the transducer 11, is placed on the base 23."<sup>2</sup>

---

<sup>1</sup>Please see, lines 4 - 9, page 4 of the Action.

<sup>2</sup>Please see, the bridging sentence between pages 4 and 5 of the Action .

However, the Examiner is attempting to mis-characterized the teachings of Kobayashi. That is, Kobayashi clearly discloses that:

The four strain gauges 16a-16d are provided as follows. The strain gauges 16a and 16c are attached to one surface of the beam 11. ... And also, the strain gauges 16b and 16d are attached to one surface of the beam 11, on both sides of the weight 15 in parallel to each other.<sup>3</sup>

From the above, it is clear that the detection section of Kobayashi is installed on the surface on the beam 11 and not on the base 23, as called for in claim 1.

In other words, Kobayashi fails to disclose the feature of a detecting section which is installed on the base and detects the amount of characteristic corresponding to a torsion of the transducer caused by an angular moment centered on the supporting position of the weight portion upon application of acceleration in one direction to the transducer and the weight portion.

In addition, while Kobayashi discloses a method for suppressing torsion in a portion supporting the inertia, which causes an error in sensitivity, the present invention, on the other hand, generates torsion in the supporting portion and detects the moment of the torsion, thereby eliminating errors caused by the torsion of the supporting portion.

---

<sup>3</sup>Please see, lines 50 - 60, column 4 of Kobayashi.

That is, the present invention has such a structure that a portion for converting a force of torsion into an electric signal detects a torsion only, so as to positively utilize the torsion in the portion for supporting the inertia.

Thus, for at least these reasons, it is respectfully asserted that the prior art fails to teach or suggest recitations of claims 1 and 2, and request that the Examiner allow these claims, along with the entire application, to issue. Accordingly, withdrawal of the rejection of claims 1 and 2 under 35 U.S.C. §102 is respectfully solicited.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, WESTERMAN & HATTORI, LLP



Thomas E. Brown  
Attorney for Applicant  
Reg. No. 44,450

TEB/kal  
Atty. Docket No. **991021**  
Suite 1000, 1725 K Street, N.W.  
Washington, D.C. 20006  
(202) 659-2930



23850

PATENT TRADEMARK OFFICE

Enclosures: Version with markings to show changes made

**IN THE CLAIMS:**

Claim 1 has been AMENDED to read as follows:

1. (Five Times Amended)An acceleration sensor for detecting acceleration, comprising:  
a base;  
a transducer that is supported at the base and exhibits torsion vibration only when acceleration is caused;  
a weight portion that is connected to the not permanently oscillating transducer, and supported at a position different from the center of gravity of the transducer and the weight portion itself; and  
a detecting section which is installed on the base and detects the amount of characteristic corresponding to a torsion of the transducer caused by an angular moment centered on the supporting position of the weight portion upon application of acceleration in one direction to the transducer and the weight portion;  
wherein a face of the transducer is made flush with a face of the weight portion.